

1 CLAIMS

2 What I claim is:

1 1. An endless loop belt conveyor system having a pair of generally parallel
2 side walls and joined by a series of spaced apart connector bars to form a rigid frame and
3 having substantially no support rollers carried between the parallel side walls of the
4 frame, the parallel side walls of the frame having a distance between them, the conveyor
5 system further comprising:

6 at least one endless loop belt conveyor belt support and guide; and
7 at least two conveyor belt support and guide mounts, said conveyor belt support
8 and guide mounts designed to be supported in spaced apart relation by a pair of generally
9 parallel side walls of a conveyor frame, any said two or more conveyor belt support and
10 guide mounts supporting said at least one endless loop belt conveyor belt support and
11 guide, and wherein each said endless loop belt conveyor belt support and guide includes a
12 smooth, non-moving upper surface designed to support and guide an endless loop belt for
13 movement around the conveyor system substantially without support rollers.

1 2. An endless loop belt conveyor as in claim 1 wherein said endless loop belt
2 conveyor belt support and guide is substantially linear.

1 3. An endless loop belt conveyor as in claim 1 wherein said endless loop belt
2 conveyor belt support and guide is substantially flat.

1 4. An endless loop belt conveyor as in claim 1 wherein said endless loop belt
2 conveyor belt support and guide includes two or more adjacent belt conveyor belt support
3 and guides.

1 5. An endless loop belt conveyor as in claim 1 wherein said endless loop belt
2 conveyor belt support and guide has a width dimension, said loop belt conveyor belt
3 support and guide width dimension being less than the distance between a pair of
4 generally parallel side walls of a conveyor frame.

1 6. An endless loop belt conveyor as in claim 5 wherein said endless loop belt
2 conveyor belt support and guide is not connected to the pair of generally parallel side
3 walls of a conveyor frame.

1 7. An endless loop belt conveyor as in claim 1 wherein each said conveyor
2 belt support and guide mount include an upper yoke portion, said upper yoke portion
3 having a width dimension substantially the same as the distance between the pair of
4 generally parallel side walls of a conveyor frame, said yoke portion designed to be
5 connected to and be supported by such a pair of generally parallel side walls of a
6 conveyor frame.

1 8. An endless loop belt conveyor as in claim 7 wherein each said conveyor
2 belt support and guide mount includes a U – shaped frame connected to and supported by
3 and below said upper yoke portion.

1 9. An endless loop belt conveyor as in claim 8 wherein each said U – shaped
2 frame portion of said conveyor belt support and guide mount includes a freely rotatable
3 return roller for supporting and guiding the return portion of an endless loop belt.
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1 10. An endless loop belt conveyor as in claim 1 wherein the rigid frame has a
2 head portion and a tail portion.

1 11. An endless loop belt conveyor as in claim 9 wherein when after
2 substantially all of the support rollers are removed from the rigid frame, motor driven
3 sprocket roller means is dropped in and attached at the head portion or at the tail portion
4 of the frame, and idler sprocket roller means is dropped in and attached at the opposed
5 tail portion or head portion of the frame.

1 12. A conversion kit for converting a roller conveyor that includes a frame
2 having two generally parallel side walls and had originally carried a plurality of support
3 rollers at spaced apart locations between the parallel side walls into an endless loop belt
4 conveyor, the frame having a head portion and a tail portion, the kit including:
5 an endless loop belt conveyor belt support and guide designed to be directly or
6 indirectly supported by a pair of generally parallel side walls of a conveyor frame; and
7 motor driven sprocket roller means designed to be dropped in and attached at the
8 head portion or at the tail portion of a conveyor frame.

1 13. A conversion kit as in claim 12 wherein said conversion kit includes idler
2 sprocket roller means designed to be dropped in and attached at the head portion or at the
3 tail portion of a conveyor frame.

1 14. A conversion kit for converting a roller conveyor that includes a frame
2 having two generally parallel side walls and had originally carried a plurality of support
3 rollers at spaced apart locations between the parallel side walls into an endless loop belt
4 conveyor, the frame having a head portion and a tail portion, the kit comprising:
5 at least one endless loop belt conveyor belt support and guide; and
6 at least two conveyor belt support and guide mounts, said conveyor belt support
7 and guide mounts designed to be supported in spaced apart relation by a pair of generally
8 parallel side walls of a conveyor frame, any said two or more conveyor belt support and
9 guide mounts supporting said at least one endless loop belt conveyor belt support and
10 guide, and wherein each said endless loop belt conveyor belt support and guide includes a
11 smooth, non-moving upper surface designed to support and guide an endless loop belt for
12 movement around the conveyor system substantially without support rollers.

1 15. A conversion kit as in claim 14 wherein said endless loop belt conveyor
2 belt support and guide is substantially linear and substantially flat.

1 16. A conversion kit as in claim 14 wherein said endless loop belt endless
2 loop belt conveyor belt support and guide includes two or more adjacent belt conveyor
3 belt support and guides.

1 17. A conversion kit as in claim 14 wherein said conversion kit includes motor
2 driven sprocket roller means designed to be dropped in and attached at the head portion
3 or at the tail portion of a frame.

1 18. A conversion kit as in claim 14 wherein said conversion kit includes idler
2 sprocket roller means designed to be dropped in and attached at the head portion or at the
3 tail portion of the frame.

1 19. A conversion kit as in claim 15 wherein said generally parallel side walls
2 of a conveyor frame have a distance between them, and wherein said endless loop belt
3 conveyor belt support and guide has a width dimension, said loop belt conveyor belt
4 support and guide width dimension being less than the distance between a pair of
5 generally parallel side walls of the conveyor frame with which said endless loop belt
6 conveyor belt support and guide is to be associated, and wherein further said endless loop
7 belt conveyor belt support and guide is not designed to be or intended to be connected to
8 the generally parallel side walls of a conveyor frame.

1 20. A conversion kit as in claim 14 wherein said generally parallel side walls
2 of a conveyor frame have distance between them, and wherein each said conveyor belt
3 support and guide mount include an upper yoke portion, said upper yoke portion having a
4 width dimension substantially the same as the distance between a pair of generally
5 parallel side walls of a conveyor frame, said yoke portion designed to be connected to
6 and supported by such a pair of generally parallel side walls of a conveyor frame.

1 21. A conversion kit as in claim 14 wherein each said conveyor belt support
2 and guide mount includes a U – shaped frame connected to and supported by said an
3 upper yoke portion, and wherein further each said includes a U – shaped frame portion of

4 said conveyor belt support and guide mount includes a freely rotatable return roller for
5 supporting and guiding the return portion of an endless loop conveyor belt placed around
6 the conveyor frame.

1 22. A conversion kit as in claim 14 wherein the to-be-converted rigid frame
2 has a head portion and a tail portion, and when after substantially all of the support rollers
3 have been removed from the rigid frame motor driven sprocket roller means is provided
4 with the kit to be dropped in and attached at the head portion or tail portion of the frame
5 and idler sprocket roller means is provided with the kit to be dropped in and attached a
6 the opposed tail portion or head portion of the frame.

1 23. A method for converting a roller conveyor that had included a frame
2 having two generally parallel side walls and originally supported a plurality of support
3 rollers at spaced apart locations between the parallel side walls along the frame, into an
4 endless loop belt conveyor free of support rollers, the frame including a head portion and
5 a tail portion, the method comprising:

6 removing substantially all of the plurality of support rollers originally located
7 between the parallel side walls along the frame; and

8 attaching and supporting at least two conveyor belt support and guide mounts at
9 spaced apart locations between the parallel side walls of the substantially roller free
10 frame,

11 attaching and supporting at least one endless loop belt conveyor belt support and
12 guide, each endless loop belt conveyor belt support and guide including a smooth,
13 substantially non-moving linear upper surface to define a support conveyor bed for
14 guiding an endless loop belt conveyor for movement without support rollers.

1 24. The method as in claim 23 wherein an endless loop belt conveyor is
2 installed around the conveyor frame.

1 25. The method as in claim 23 wherein motor driven sprocket roller means is
2 dropped in and attached to the head portion or the tail portion of the conveyor frame.